Career Fact Sheet

Electronics Engineer

Related Job Titles:

Electrical engineer, computer engineer, computer scientist

Job Description:

Electronics engineers design, develop, test and lead the production of electrical and electronic equipment including scientific instruments, motors, wiring in buildings, aircraft, radar, computers, robots and video equipment. Most **engineers** work in office buildings or laboratories. Some work outdoors at construction sites. Some must travel to different work sites.

Interests / Abilities:

- Are you good at math?
- Is your work detailed?
- Do you like to solve problems?
- Are you interested in how things work?
- Do you like working with computers?
- Do you like to take things apart and put them back together?

Suggested School Subjects / Courses:

- Mathematics (**algebra**, **geometry**, **trigonometry**, **calculus**)
- Science (**physics**, **biology**, **chemistry**)
- Computers
- **Engineering** (**thermodynamics**, **fluid dynamics**, mechanical, **electronics**)

Education / Training Needed:

The minimum education required for this position is a **bachelor's degree** in electrical or **electronics engineering** from an accredited **college** or **university**. To do research, a **Ph.D.** is highly desired for this position.

Areas of Expertise:

- ***Sensors and transducers***: research and develop sensing devices such as lasers that are needed in **aerospace** research.
- ***Electronic instrumentation***: research and develop equipment that can detect, record and measure data for **aerospace** research.
- ***Guidance and navigation systems***: research and develop systems used to guide and **navigate aerospace** vehicles and spacecraft.
- ***Electromagnetic systems***: research and develop instruments, such as antenna systems, that measure electromagnetics.
- ***Tracking and telemetry systems***: research and develop systems and devices that track the flight of **aerospace** vehicles or that transmit and receive data and commands between space vehicles and the ground.
- ***Computer design***: design and develop computers or robots.

Additional Resources:

- Careers in Aviation/Aerodynamics
  http://wings.ucdavis.edu/Careers/index.html
- Order NASA career videos such as "Engineers: Turning Ideas into Reality," "Careers: Aerospace Engineer" or "Reaching for the Stars" from NASA CORE.
  http://core.nasa.gov
- Robotics Education
  http://robotics.arc.nasa.gov
- Junior Engineering Technical Society
  http://www.asee.org/jets
- Accreditation Board for Engineering and Technology, Inc.
  http://www.abet.org
- Institute of Electrical and Electronics Engineers
  http://www.ieee.org

What can I do right now?

- Participate in Bot-Ball or Robotics First competitions (see Robotics Education http://robotics.arc.nasa.gov/).
- Take as many math and science classes as you can.
- Participate in National Engineers Week.
- Call the American Association of Science and Technology Centers for information on science museums in your area that you might visit (202) 783-7200.
- Order activity books, poster sets and **engineering** kits by writing to the Society of Manufacturing Engineers, One SME Drive, P.O. Box 930, Dearborn, MI 48121-0930.